UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,980	08/18/2003	Lon E. Bell	BSST.009CP1	3194

20995 7590 01/04/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
FICK, ANTHONY D	
ART UNIT	**PAPER NUMBER**
1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/04/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/04/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	10/642,980	BELL, LON E.	
	Examiner	Art Unit	
	Anthony Fick	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1-5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 through 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 recites the limitation "the working media" in line 3. There is insufficient antecedent basis for this limitation in the claim.

4. Claims 2 through 17 all depend from claim 1 and are indefinite for the same reasoning.

5. Claim 2 recites the limitation "the working fluid" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 8 recites the limitation "the working fluid" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 8 further states "the working media heated through combusting". It is unclear as to if the claim is missing a word or if applicant meant the claim to read as such.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 through 9, 13, 14, 15, 19, 20, 21 and 24 through 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Stachurski (U.S. 4,125,122).

Stachurski discloses a direct energy conversion device as shown in figures 1, 2 and 4.

Regarding claim 1, figure 1 shows a power generation system comprising a plurality of thermoelectric elements forming an assembly having a cooler side and a hotter side during operation, p and n elements 61, 62 and 63, wherein the working media collects waste heat from the colder side of at least some of the elements, stream 35, the working media further heated, heater structure 1, 2 and 3, and then dispenses a portion of its heat to the hotter side of at least some of the elements, stream 5, thereby generating power with the thermoelectric elements and at least an electrical system to transfer power from the assembly, 196 (see columns 5 and 6).

Regarding claims 2 through 5, Stachurski discloses heating the fluid from a source of heat, the heat source being combustion, solar, or nuclear (column 3, lines 30-35). The present claimed isotope is provided by each of Stachurski's heat sources as chemical combustion involves isotopes, the sun has isotopes, and a nuclear reaction will involve isotopes.

Regarding claims 6, 7, 8 and 9, Stachurski discloses several working fluids including solids (inorganic salts), fluids (organic compounds and liquid metals) and mixtures of fluid and solid (molten salts will be a mixture of solid and liquid at certain temperatures) (column 3, paragraph 12). Stachurski also discloses using combustion

exhaust gas as the working fluid (column 5, lines 5-7) thus the working media can be heated through combusting the working fluid (air).

Regarding claims 13 and 14, the pump, 31, in figure 1 controls the flow of media throughout the system and thus controls the power generation by determining the temperature gradient on each thermoelectric device. A human operator or a computer controller, thus providing a power generation controller, inherently controls this pump.

Regarding claim 15, figure 1 shows a plurality of heat exchangers in thermal communication with the thermoelectric elements.

Regarding claim 19, Stachurski discloses a method to use the system of figure 1; a power generation system comprising a plurality of thermoelectric elements forming an assembly having a cooler side and a hotter side during operation, p and n elements 61, 62 and 63, wherein the working media collects waste heat from the colder side of at least some of the elements, stream 35, the working media further heated, heater structure 1, 2 and 3, and then dispenses a portion of its heat to the hotter side of at least some of the elements, stream 5, thereby generating power with the thermoelectric elements and at least an electrical system to transfer power from the assembly, 196 (see columns 5 and 6).

Regarding claim 21, Stachurski discloses heating the fluid from a source of heat, the heat source being solar (column 3, lines 30-35).

Regarding claim 20, Stachurski also discloses using combustion exhaust gas as the working fluid (column 5, lines 5-7) thus the working media can be heated through combusting the working fluid (air).

Regarding claims 24 through 26, the pump, 31, in figure 1 controls the flow of media throughout the system and thus controls the power generation by determining the temperature gradient on each thermoelectric device. A human operator or a computer controller, thus providing a power generation controller, inherently controls this pump. Stachurski discloses running the device for improved efficiency (column 2, paragraph 4).

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1 through 27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 through 47 of U.S. Patent No. 7,111,465 in view of Stachurski (U.S. 4,125,122). The claims of 7,111,465 do not contain the specific power generation configuration as required by the present invention.

However, the claims do have the thermal isolation requirement as in claims 16, 17 and 27. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize this isolation with the power conversion device of Stachurski because the system allows for considerable improvement of efficiency and power density of the electrical generator.

11. Claims 1 through 27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 through 63 of U.S. Patent No. 6,948,321 in view of Stachurski (U.S. 4,125,122). The claims of 6,948,321 do not contain the specific power generation configuration as required by the present invention. However, the claims do have the porous thermoelectric elements that allow the working media to pass through them and convective heat transport requirements as in claims 10, 11, 12, 17, 18, 22 and 23. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the porous elements, and convective heat transport with the power conversion device of Stachurski because the system allows for considerable improvement of efficiency and power density of the electrical generator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Fick whose telephone number is (571) 272-6393. The examiner can normally be reached on Monday thru Friday 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Fick AOF
AU 1753
December 21, 2006

NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700